

A brief look at brain imaging

A photograph showing a person in a white lab coat and purple gloves holding a human brain. The brain is resting on a white surface, likely a surgical table. Various surgical instruments, including forceps and a scalpel, are visible on the table. The scene is dimly lit, with a bright light source illuminating the brain and the person's hands.

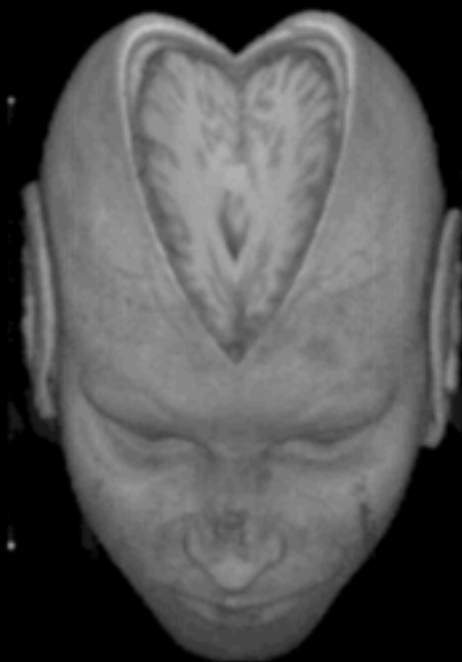
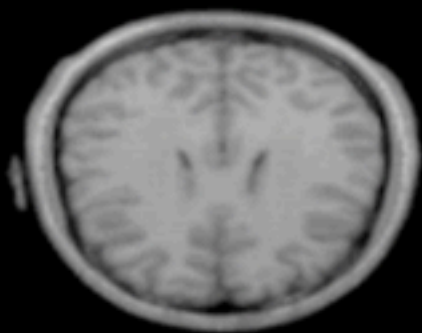
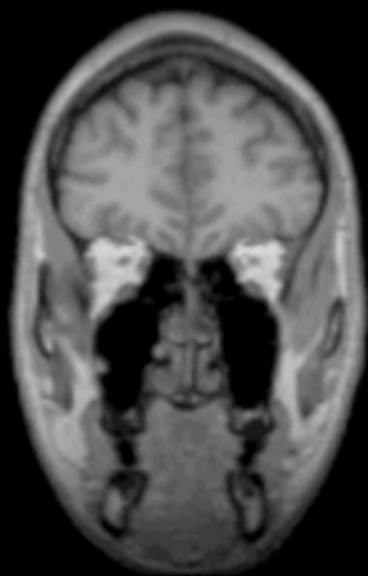
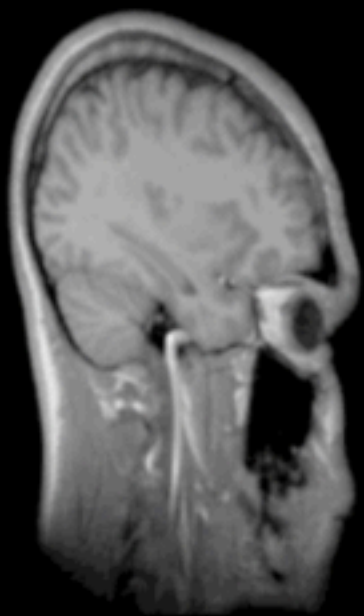
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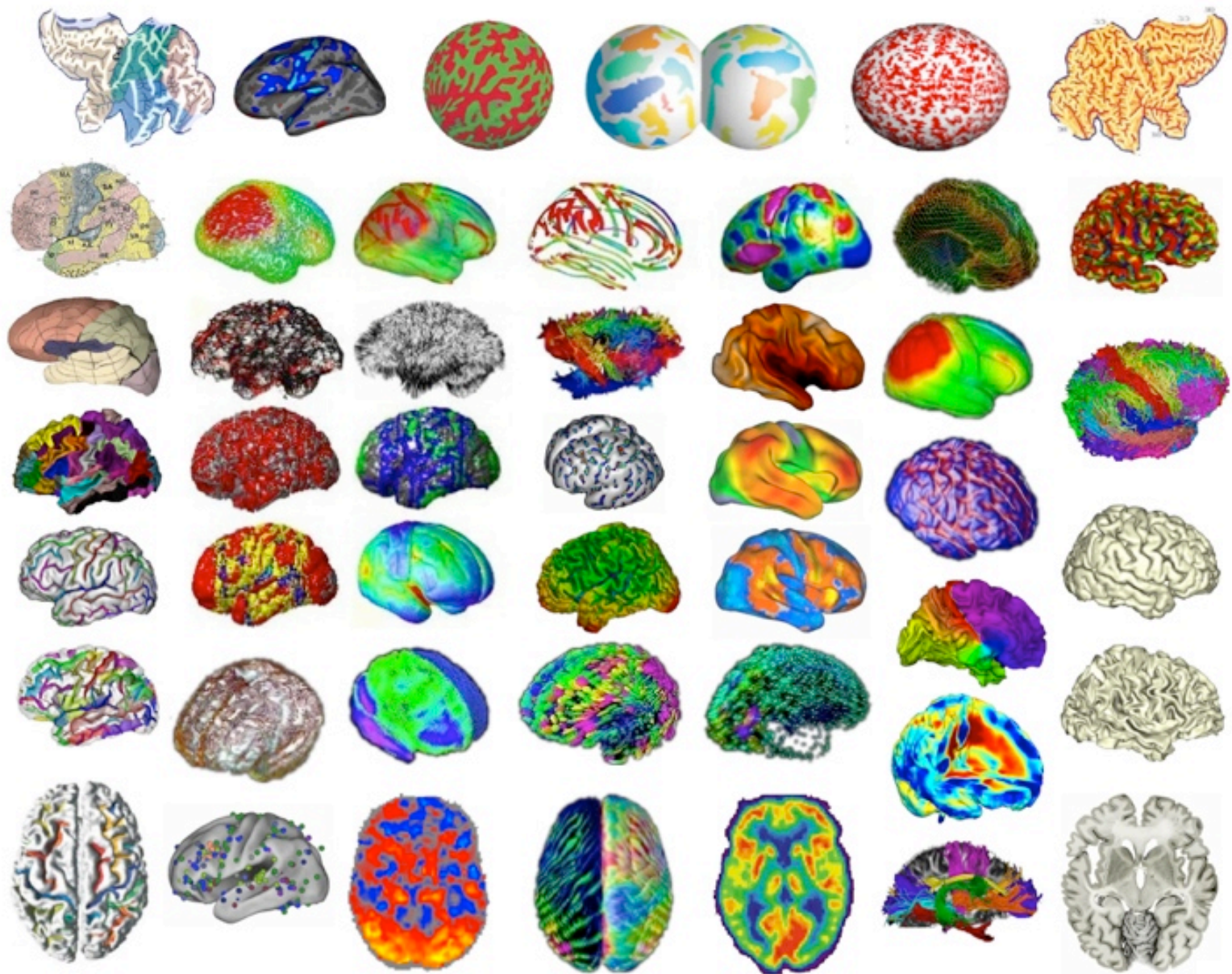
UW La Crosse: December 10, 2013

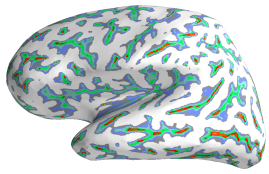




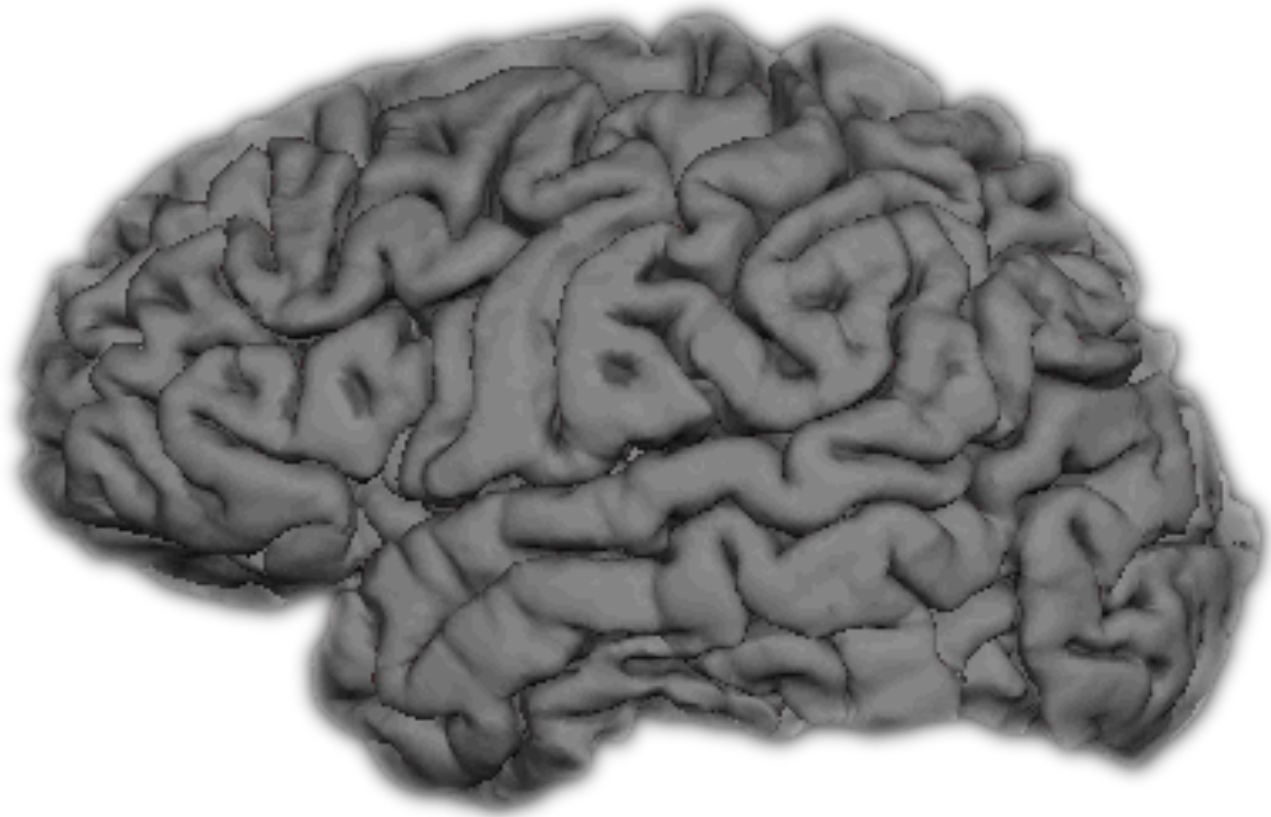


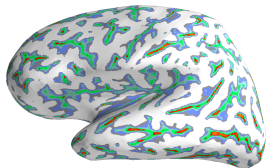






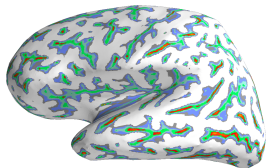
Cortical surface



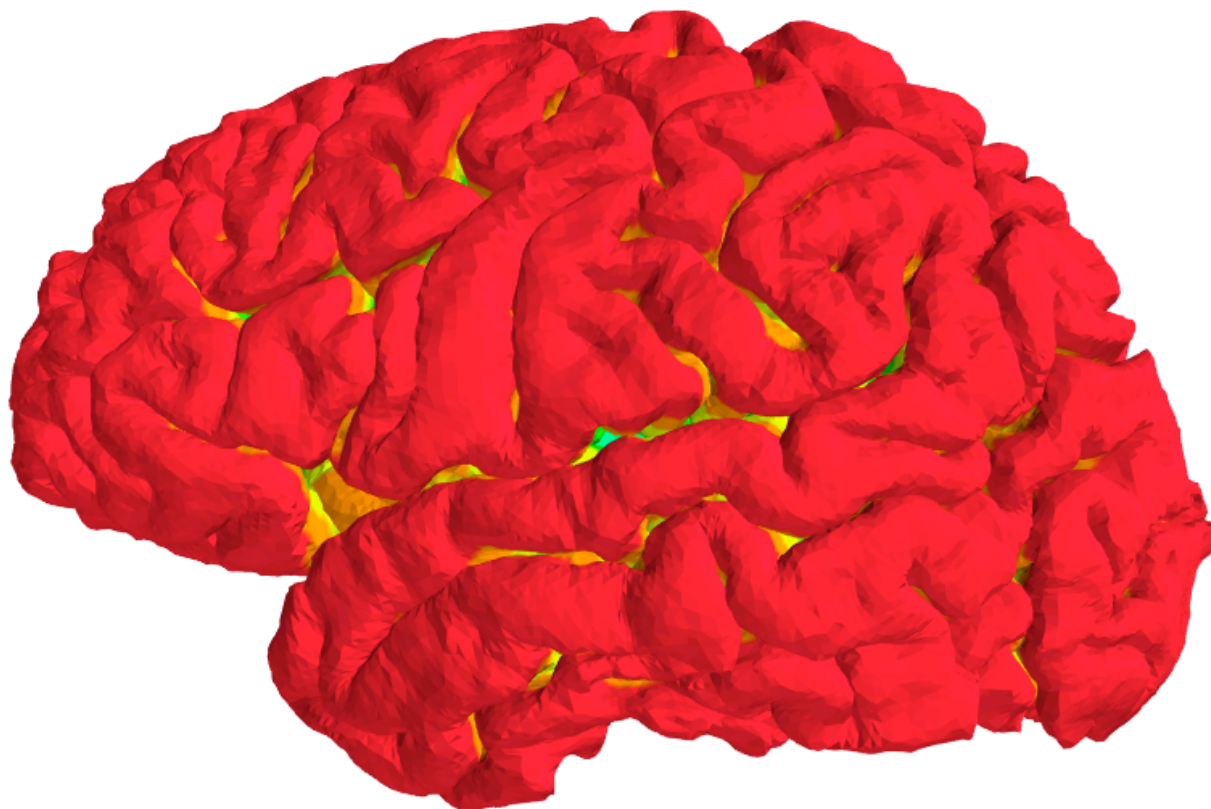


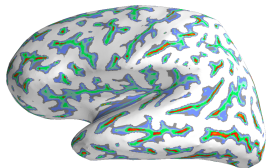
Mean curvature



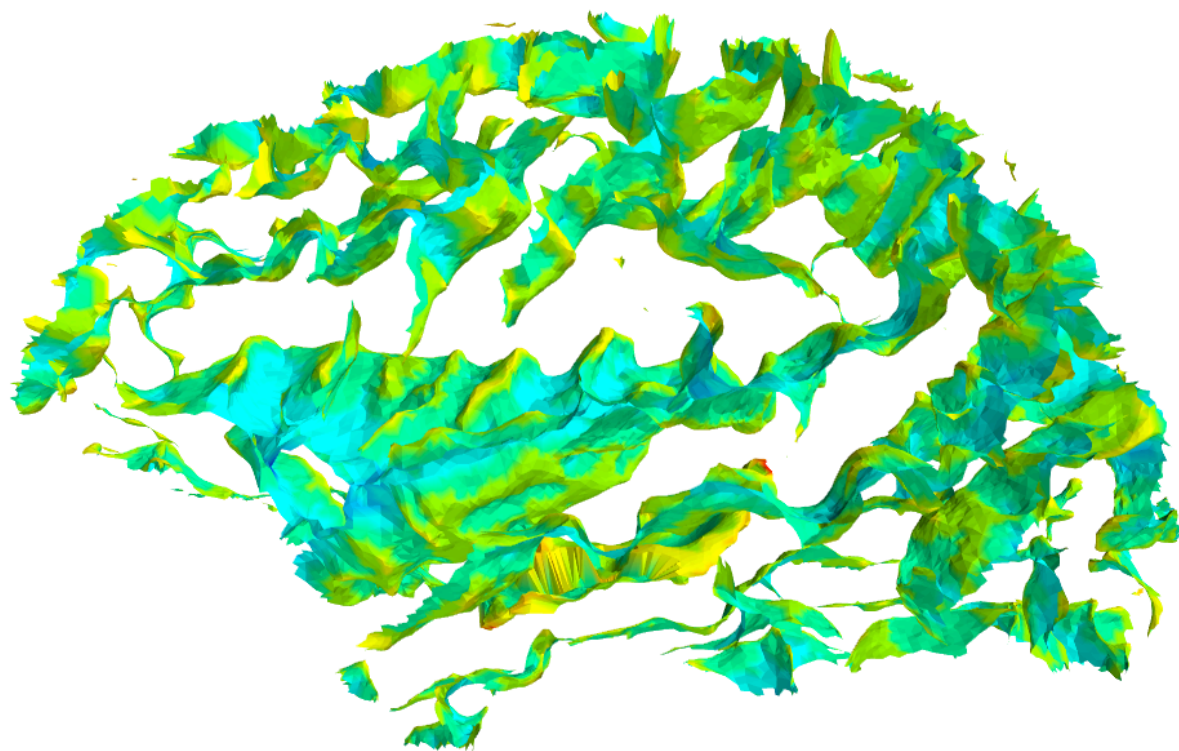


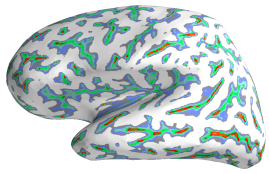
Travel depth



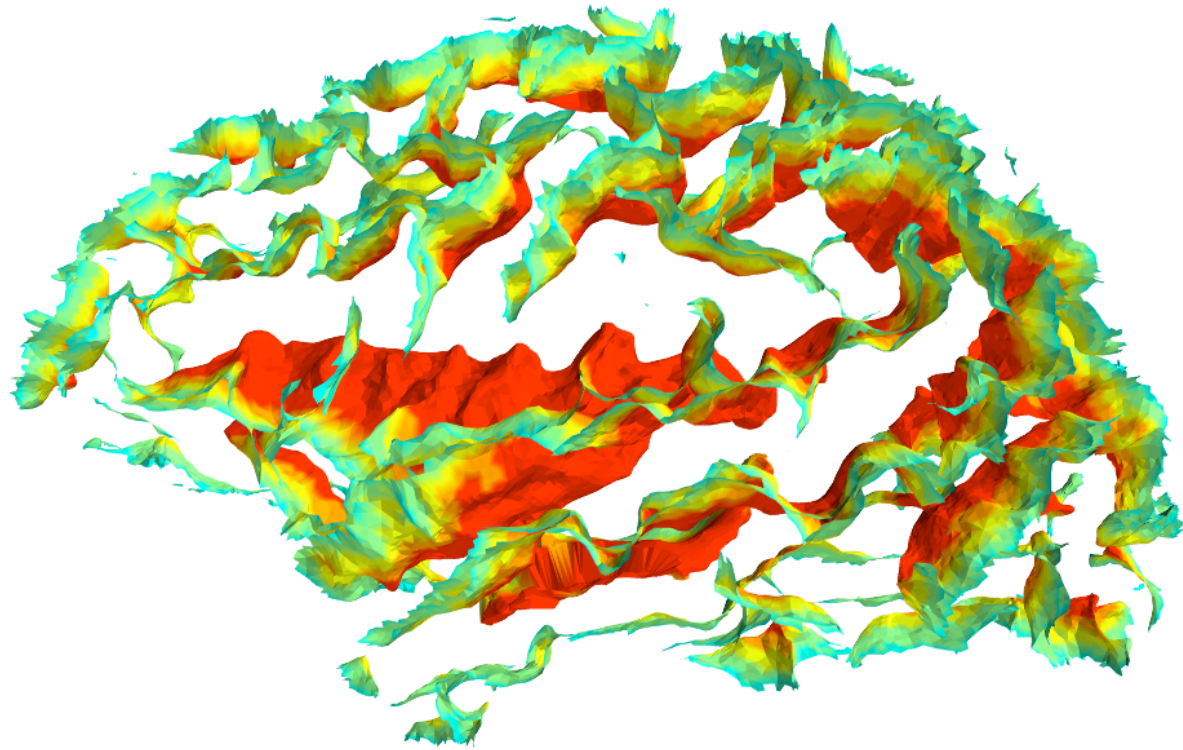


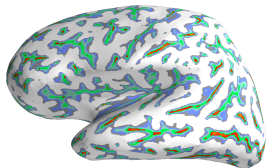
Mean curvature (folds)



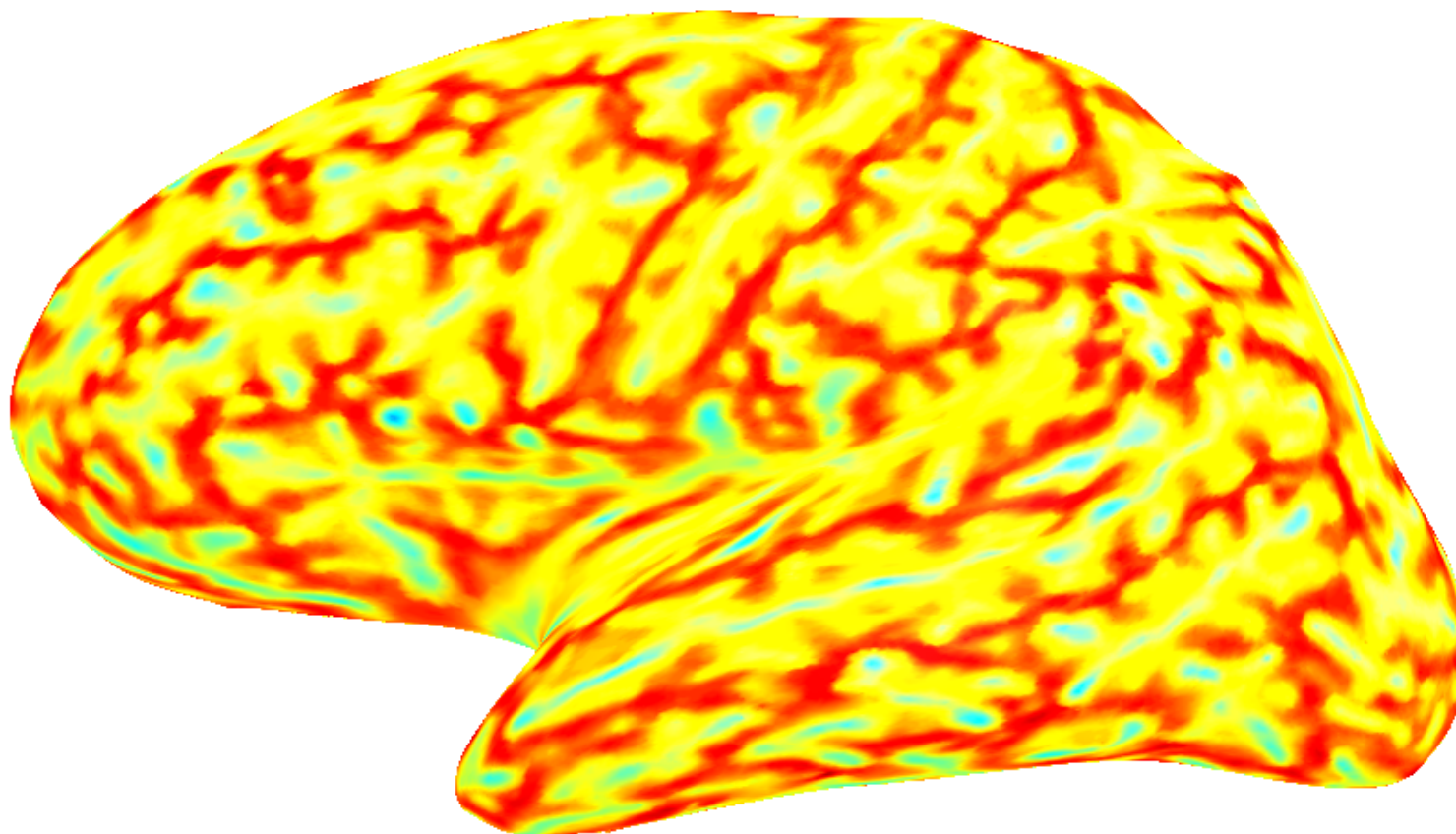


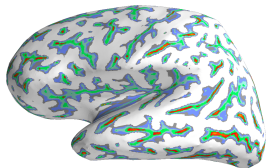
Travel depth (folds)



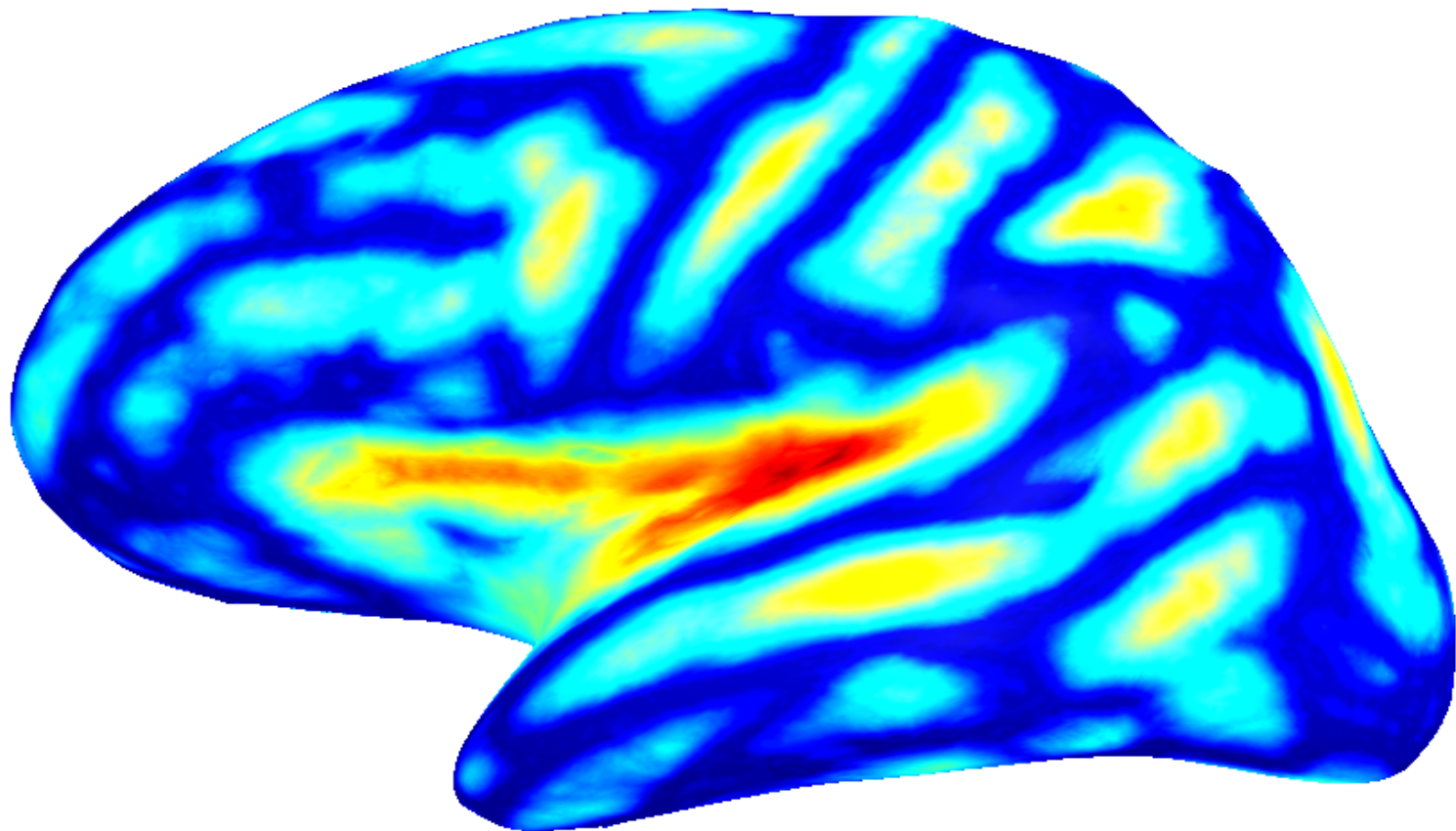


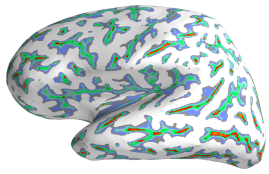
Mean curvature (inflated surface)



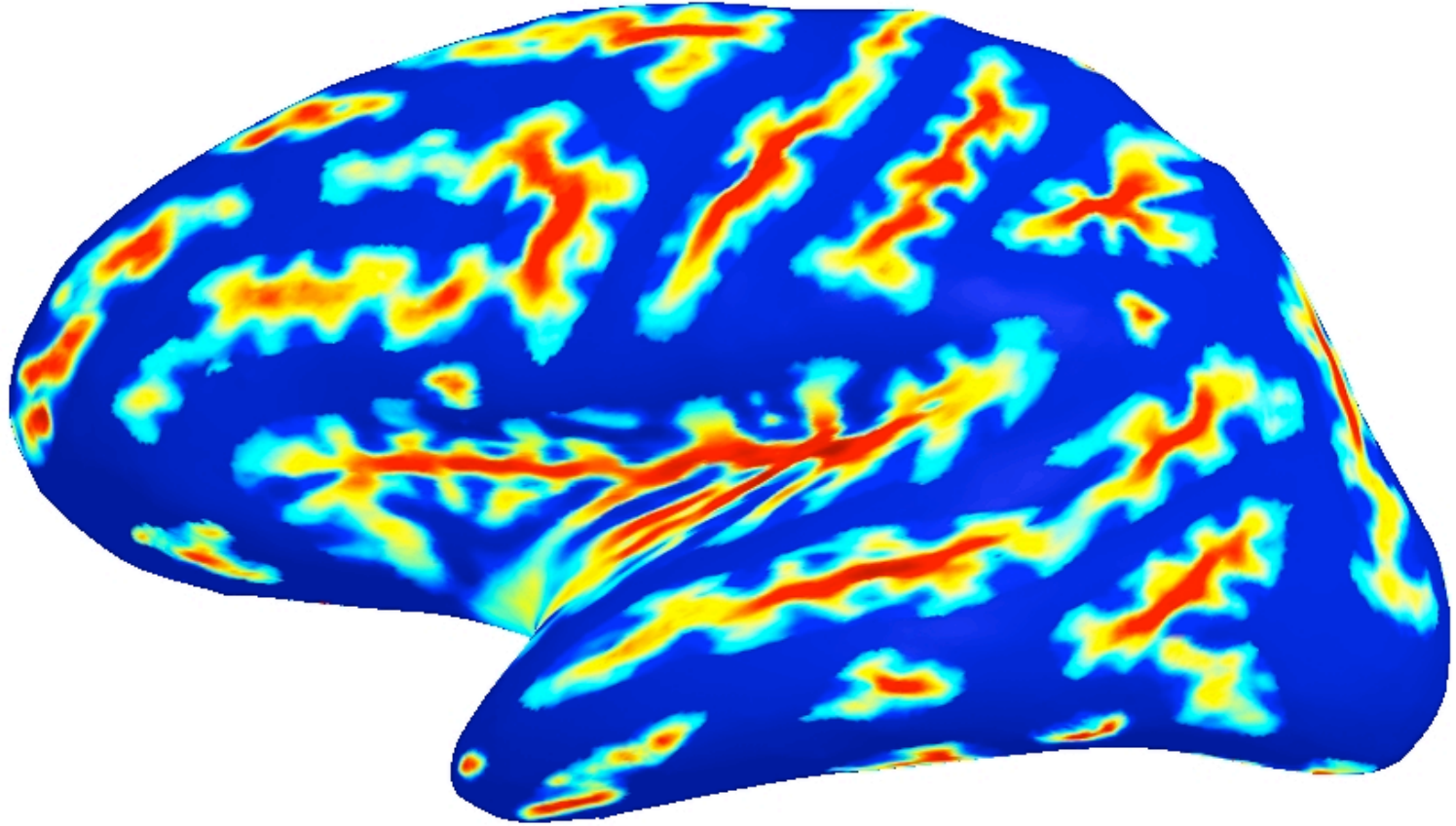


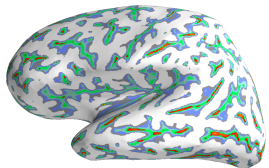
Travel depth (inflated surface)



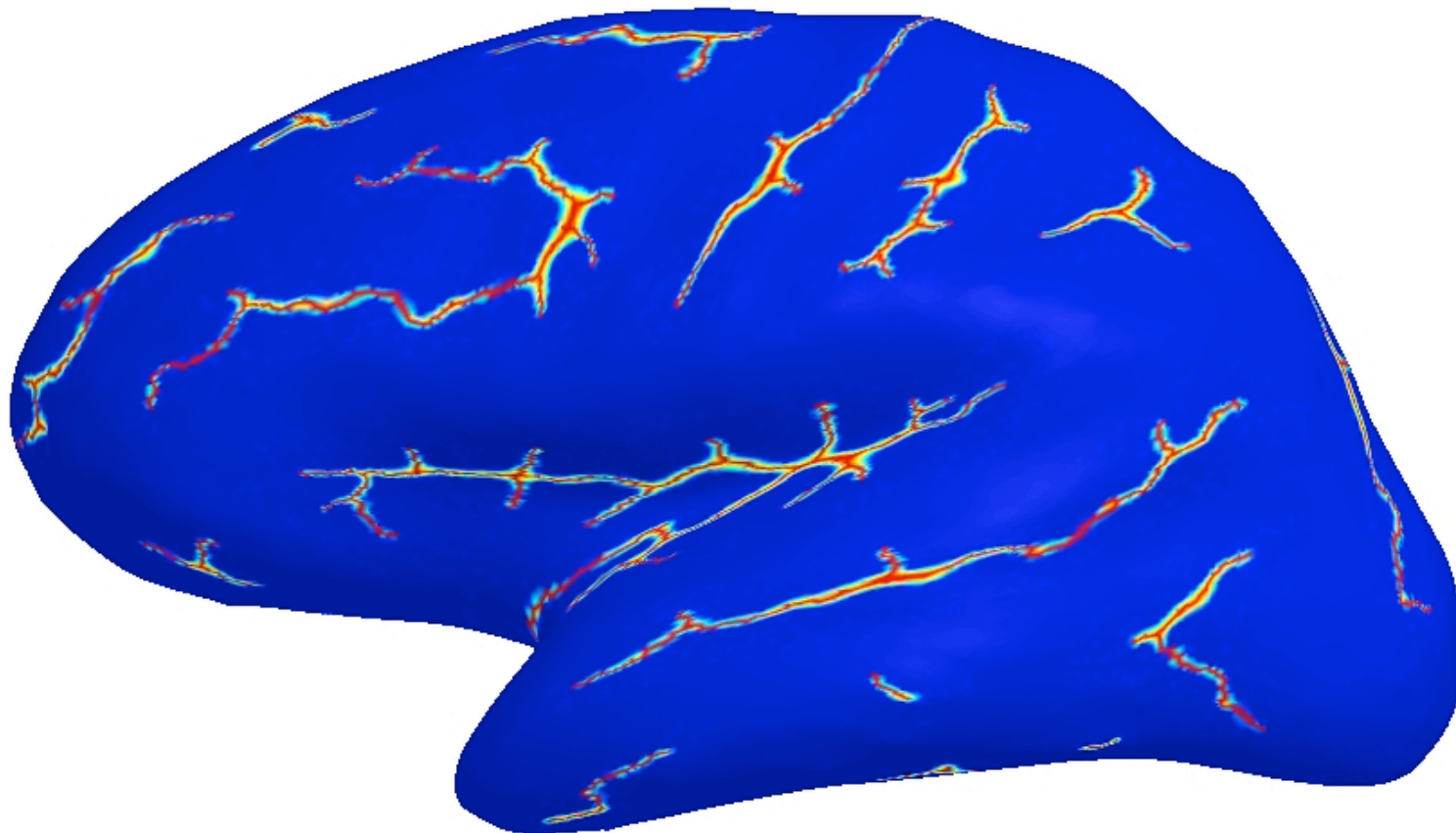


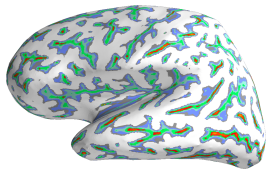
Fundus curves



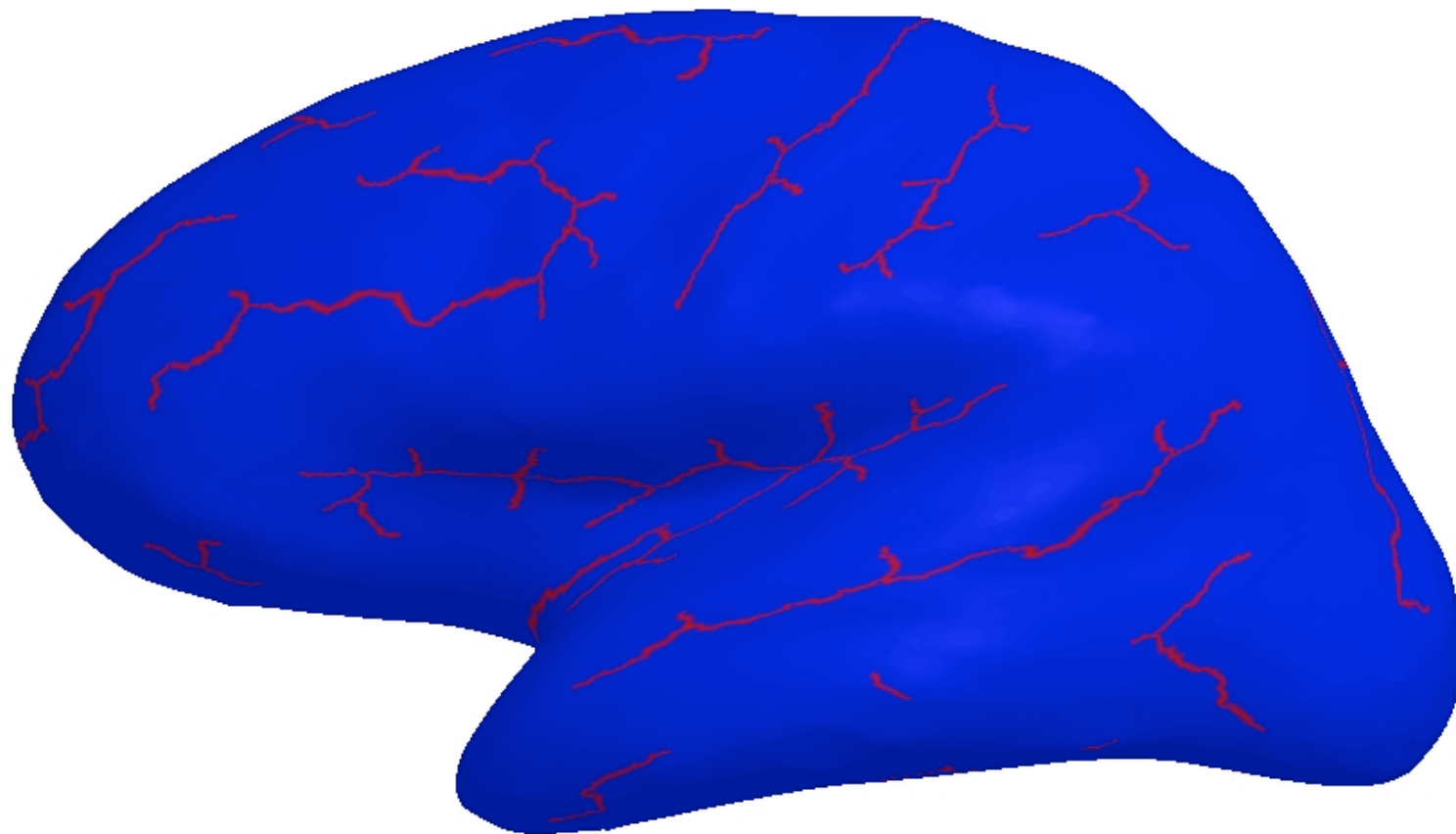


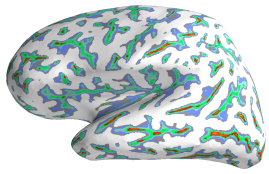
Fundus curves



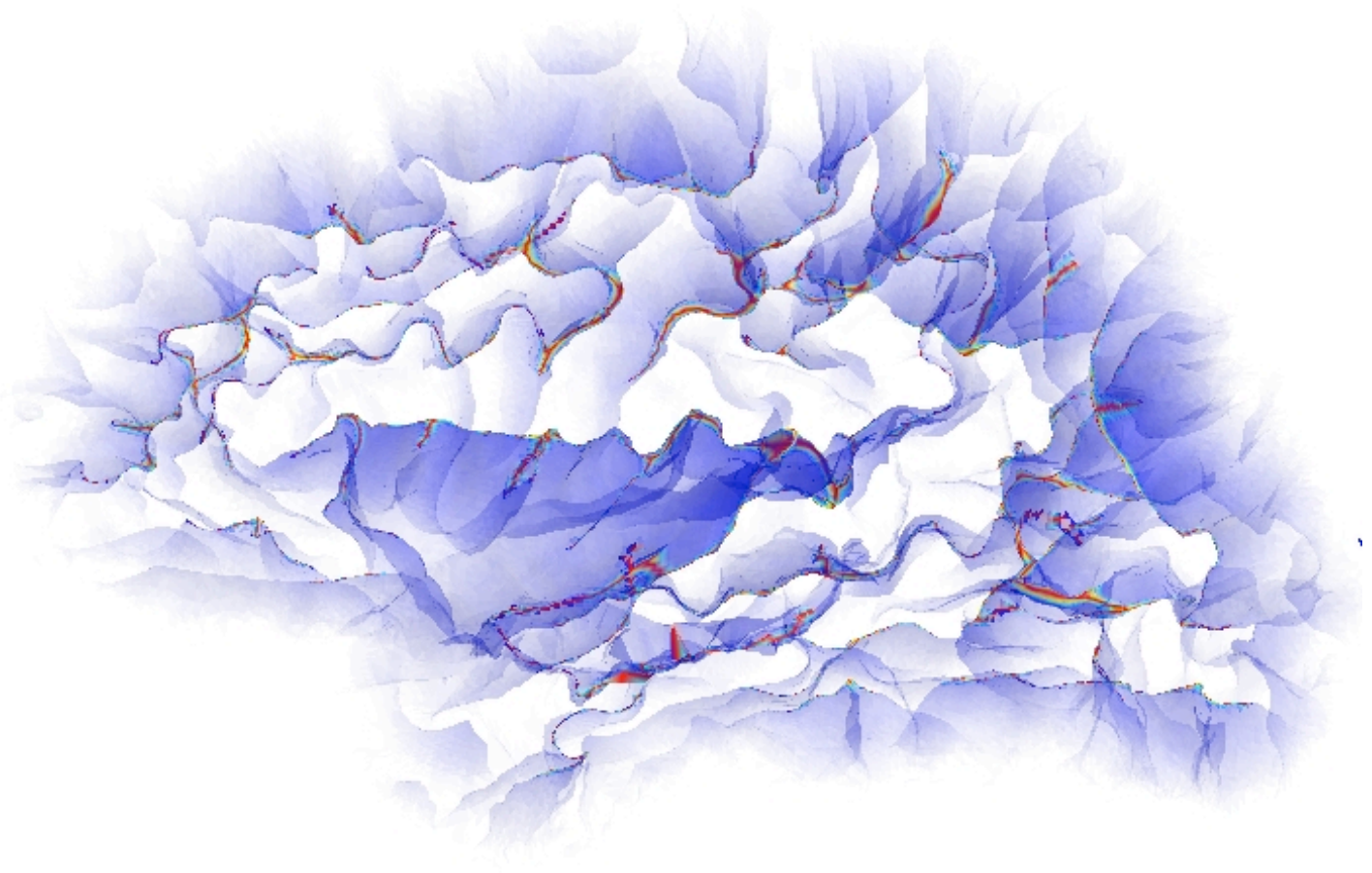


Fundus curves



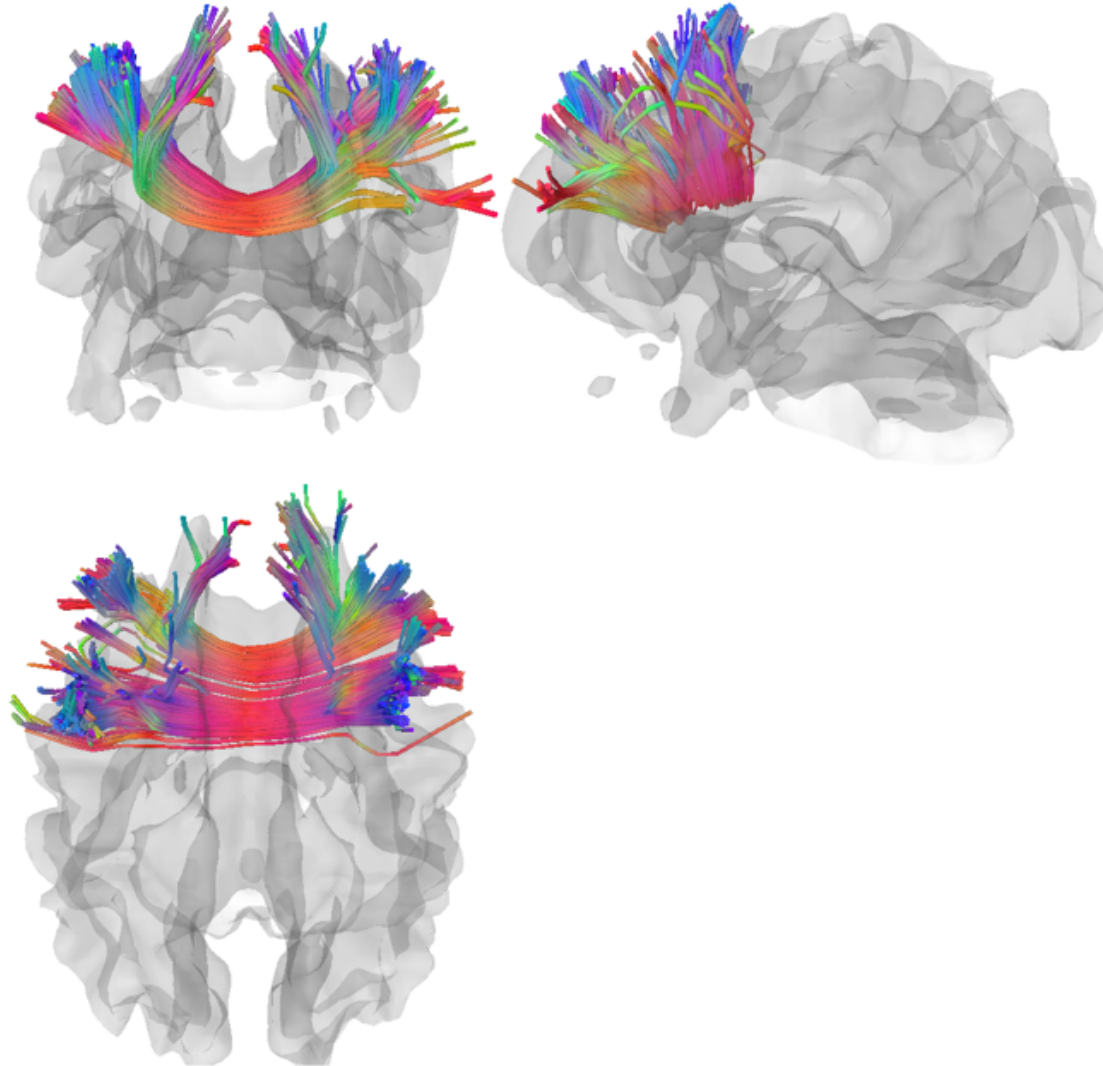


Folds + fundus curves



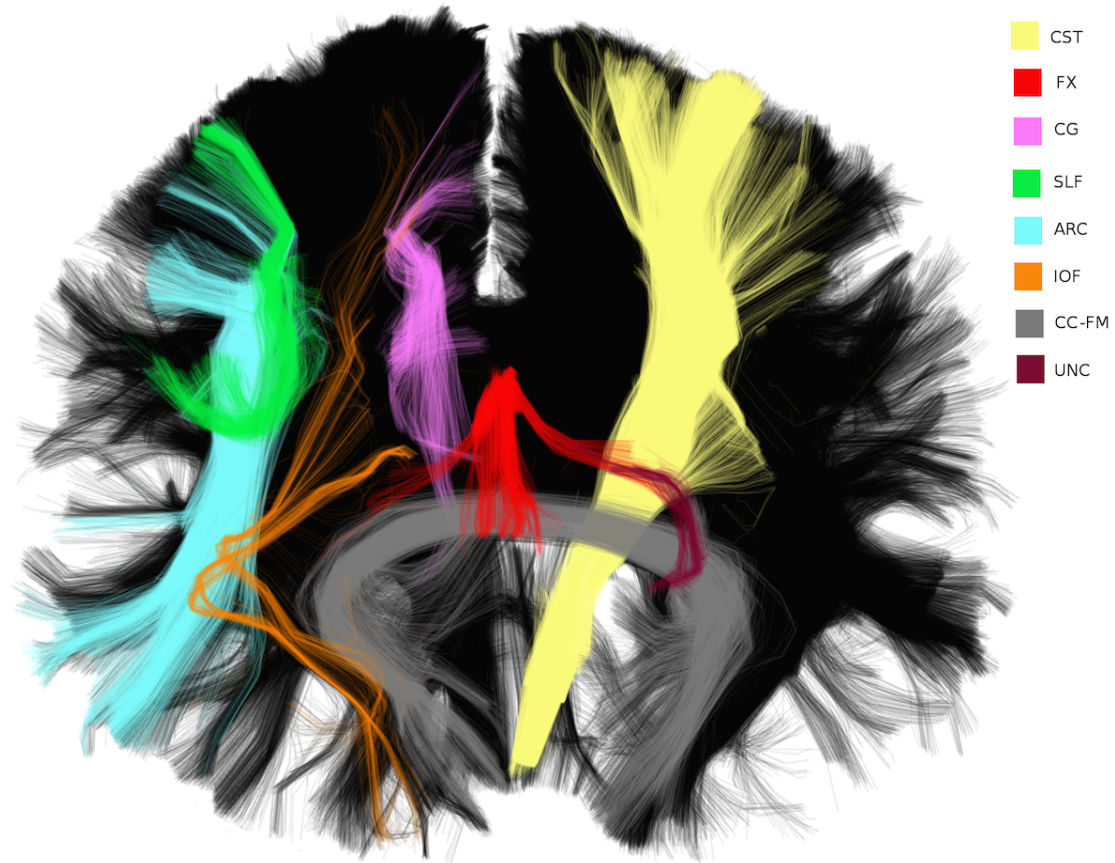


Relationships among features: Diffusion spectral imaging



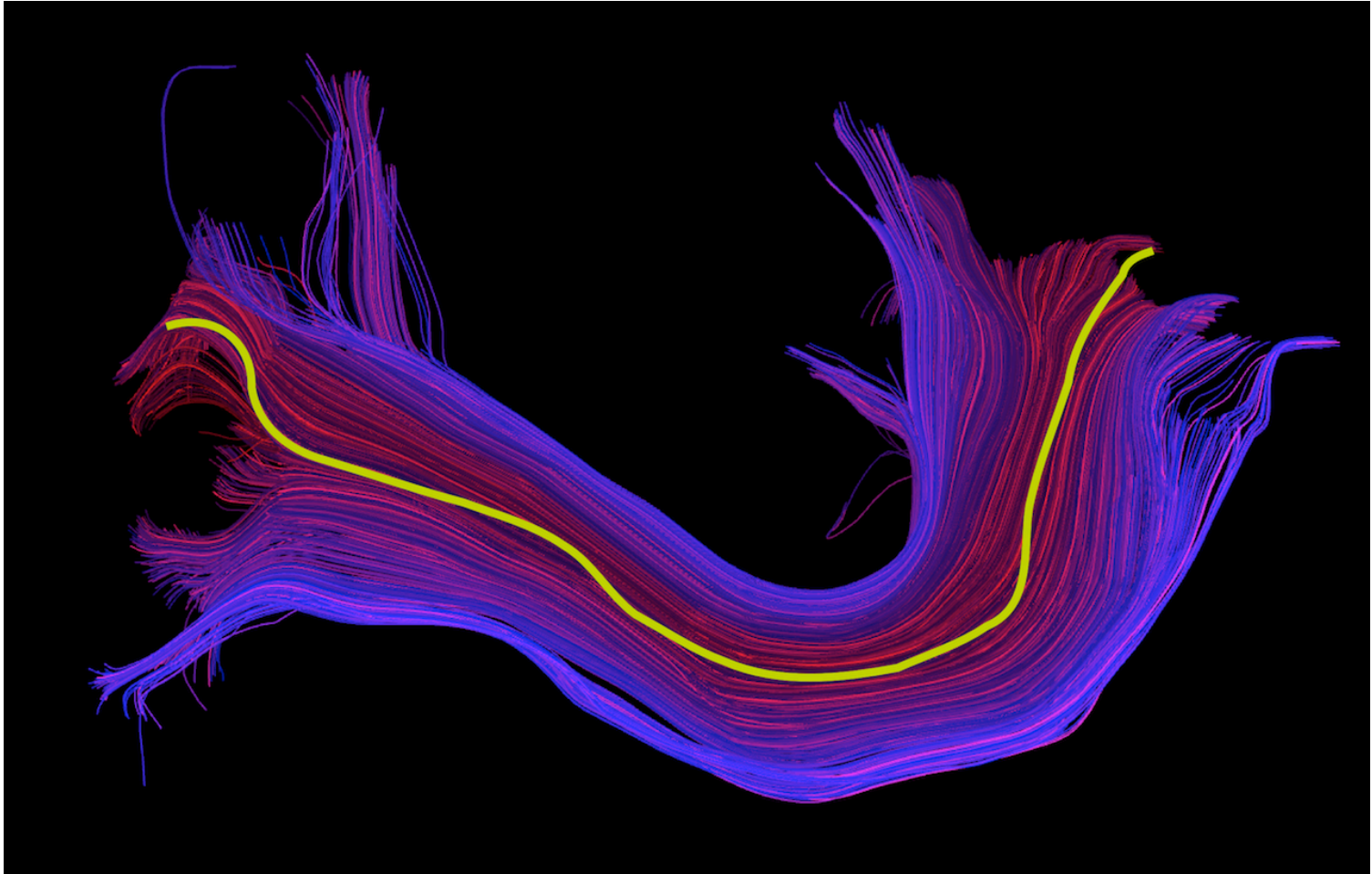


Relationships among features: dMRI connectivity



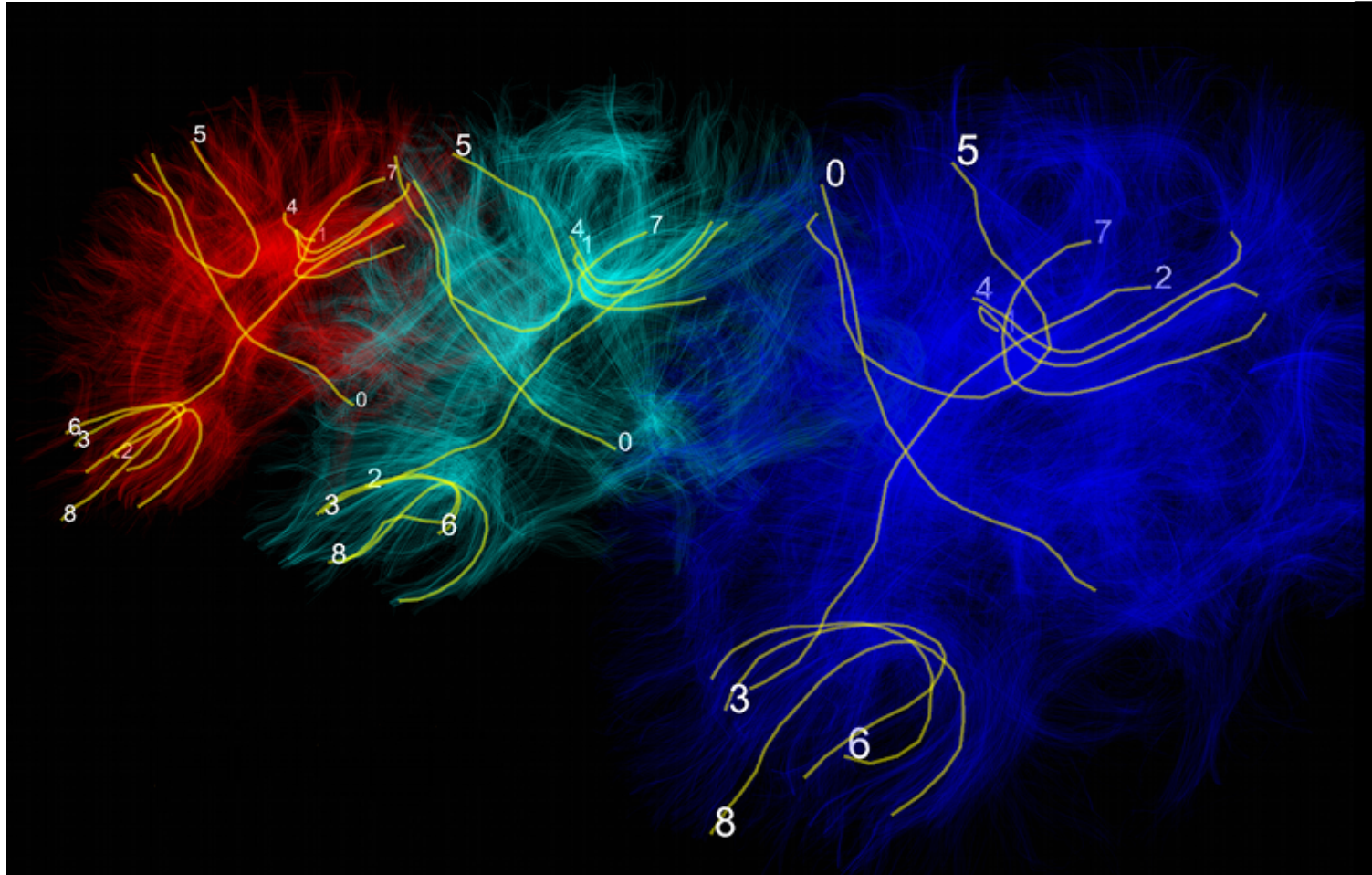


Relationships among features: dMRI connectivity



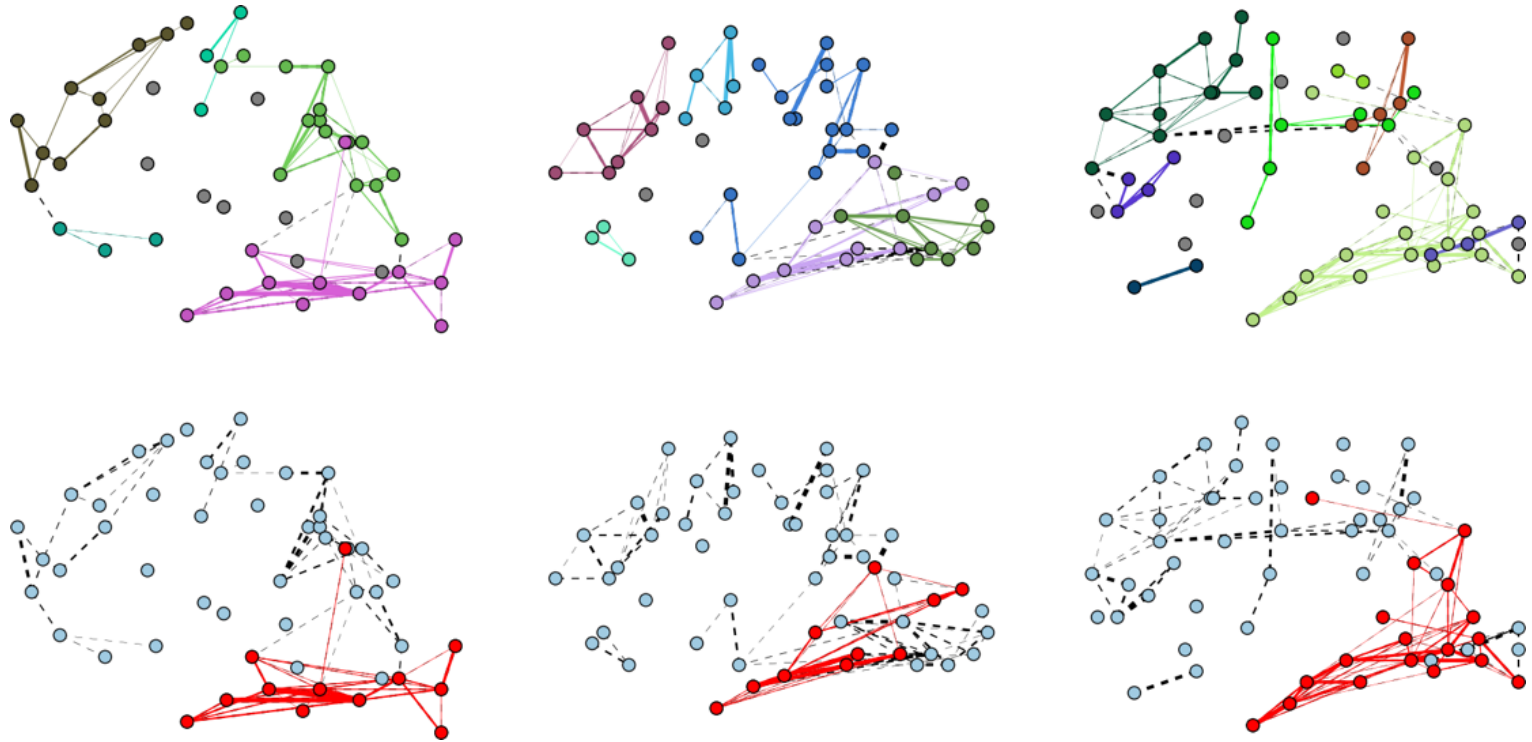


Relationships among features: dMRI connectivity





Relationships among features: dMRI connectivity



Early attempt at subgraph extraction (upper row) and matching (lower row).
These graphs were constructed from (left to right) a remitter, non-remitter, and control subject.
The subgraphs in red in the lower row have the highest small-worldness ratio.

Mindboggle team

Depth and curvature



Joachim Giard
Sony, Belgium

Nested features



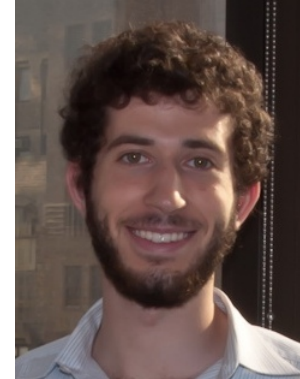
Forrest Bao
U. of Akron

Probabilistic features



Yrjö Häme
Columbia PhD student

Label propagation



Eliezer Stavsky
Columbia PhD student

Anatomical labeling



Jason Tourville
Boston U.



Greg Millington
Neuromorphometrics, Inc.

dMRI



Nolan Nichols
U. Washington PhD student

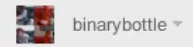
Machine learning



Satrajit Ghosh
MIT



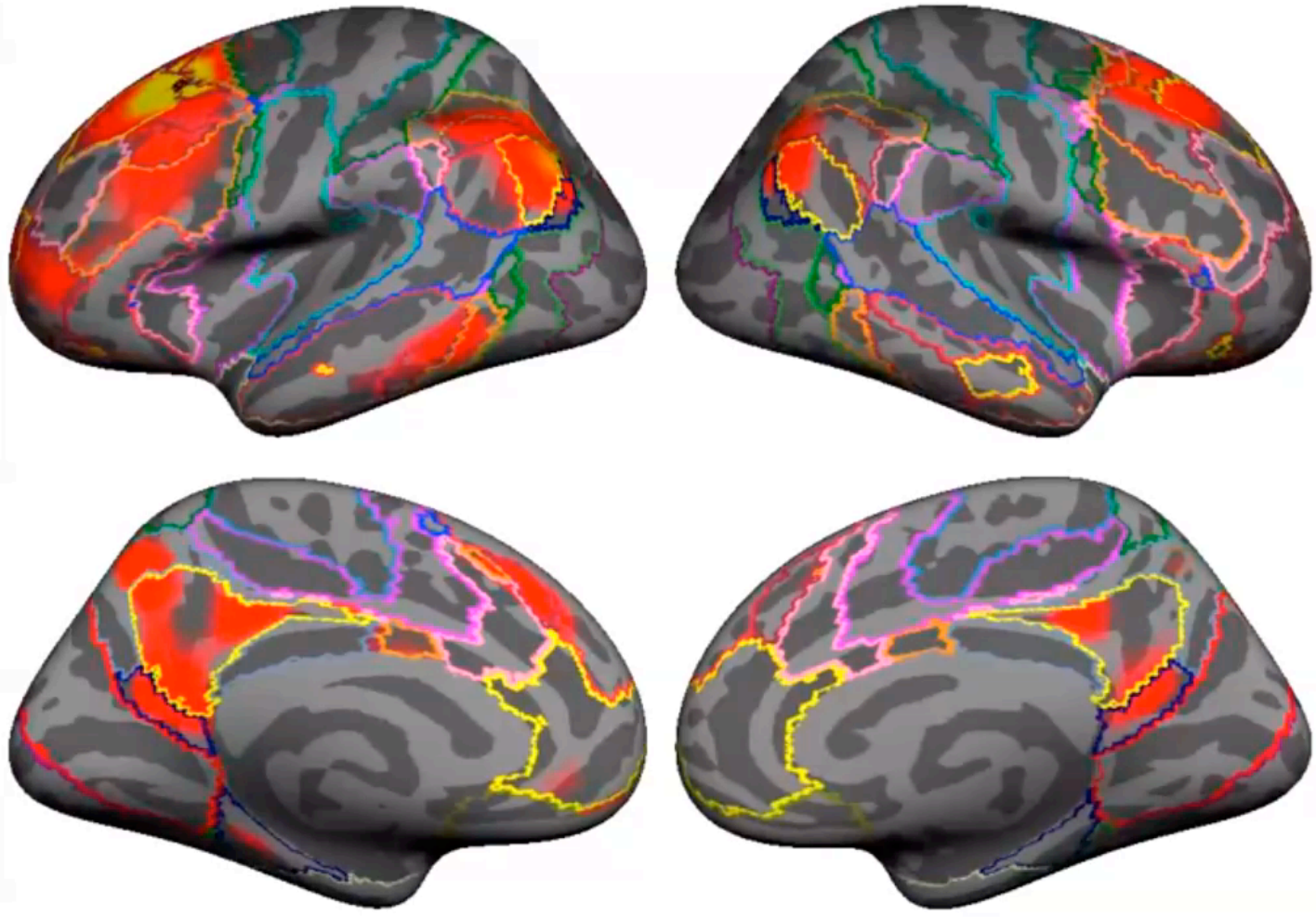
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